

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Former Texaco Casper Refinery
Facility Address: 75 Evans Street, Evansville, WY 82636
Facility EPA ID #: WYD088677943/WYD088655443

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below.
 If no - re-evaluate existing data, or
 if data are not available skip to #6 and enter "IN" (more information needed) status code.

Environmental indicators reflect success in meeting short-term corrective action goals, and are important milestones. Final remedies are the long-term goals of corrective action and are a more conclusive indication of corrective action success and accomplishment. The Wyoming Department of Environmental Quality fully supports interim activities to meet environmental indicators, but acknowledges that true success is only fully measured by implementation of appropriate final remedies.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRAs). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

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Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “**contaminated**”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	x			Based on RFI data/VOCs, SVOCs, metals, NAPL
Air (indoors) ²		x		No potential for indoor air impacts (based on RFI)
Surface Soil (e.g., <2 ft)	x			Data collected during pipe removal/RFI. Additional data collected as part of source removal and placement into CAMU. metals
Surface Water		x		Surface water monitoring program data for North Platte River
Sediment	x			Based on RFI Data/SVOCs, metals in N. Platte sediment, barrier wall contains majority of contaminated sediment
Subsurf. Soil (e.g., >2 ft)	x			Data collected during pipe removal/RFI. Additional soil sampling to be conducted as part of source removal and placement into CAMU.
				VOCs, SVOCs, metals, NAPL
Air (outdoors)		x		No potential for outdoor air impacts

—— If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

—— If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

Phase II RFI Reports (North and South Properties, Sept. 2001),
Phase II Human Health Risk Assessment Report (1995), Permit
Application for Corrective Action Management Unit (July 16,
2001).

Footnotes:

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	<u> No </u>	<u> Yes </u>	<u> No </u>	<u> No </u>			<u> No </u>
Air (indoors)	<u> </u>	<u> </u>	<u> </u>				
Soil (surface, e.g., <2 ft)	<u> No </u>	<u> Yes </u>	<u> No </u>	<u> Yes </u>	<u> No </u>	<u> No </u>	<u> No </u>
Surface Water	<u> </u>	<u> </u>			<u> </u>	<u> </u>	<u> </u>
Sediment	<u> No </u>	<u> No </u>			<u> No </u>	<u> No </u>	<u> No </u>
Soil (subsurface e.g., >2 ft)		<u> Yes </u>		<u> Yes </u>			<u> </u>
Air (outdoors)	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“ ”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

 If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

 X If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

 If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

On site workers (both construction and otherwise) may be exposed to surface soil and subsurface soil contamination. Workers may also be exposed to groundwater as it is pumped to the surface and placed in a groundwater treatment unit.

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

- X If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- _____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- _____ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

Data from the Phase II Human Health Risk Assessment (HHRA) indicated unacceptable risk levels existed under current land use scenario for industrial worker exposure to surface soils contaminated with lead. However, ChevronTexaco will be removing the leaded soils and placing them in a Corrective Action Management Unit (CAMU) prior to September 30, 2002 (see attached correspondence from ChevronTexaco dated September 6, 2002).

For subsurface soils, unacceptable risk levels were not identified as part of the Phase II HHRA, and many of subsurface soils sources will also be removed and placed in the CAMU.

For groundwater, exposure is associated with workers in the vicinity of the groundwater treatment unit and is not expected to be significant as the engineering controls on the systems and worker personal protective equipment should limit exposures.

If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

 X If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

 If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

 If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

Phase II Human Health Risk Assessment

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.